



**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re Patent Application of

Anette BUSCHKA et al.

Application No.: 09/870,517

Filed: June 1, 2001

For: A TEXTILE FIBRE REINFORCED  
ABSORBENT MATERIAL

) **Mail Stop:**  
) **APPEAL BRIEF - PATENTS**  
)  
) Group Art Unit: 1771  
)  
) Examiner: Elizabeth Cole  
)  
) Confirmation No.: 9594  
)  
) **Appeal No.: 2008-1467**

**REQUEST FOR REHEARING**

**Mail Stop APPEAL BRIEF - PATENTS**

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

Appellants hereby file a request for rehearing of the original decision of the Board.

Appellants recognize that arguments not raised in the briefs before the Board and evidence not previously relied upon in the brief and any reply brief(s) are not generally permitted unless based on a new precedential decision. Appellants assert that any alleged new argument is based solely on the Board's reliance on the Supreme Court decision in *KSR International v. Teleflex Inc.*, 127 S.Ct. 1727 (2007).

Appellants submitted the Appeal and Reply Briefs in this proceeding before the *KSR* decision was published and, thus, did not have the opportunity to fully address the *KSR* decision. Accordingly, any alleged new argument should be considered proper.

Appellants respectfully assert that the Board has erred in its holding. The Board has not properly considered the question of whether the improvement (of the claimed invention) is more than the predictable use of prior art elements according to their established functions.

A finding of the Board is:

We find that using an air-doffing apparatus card achieves the predictable result of making a uniform non-woven web and were [*sic*] a known alternative way of forming a non-woven web versus air laying a carded web using a lickerin roll as taught in *Matsumura*. Appellants have not shown that there is more than a predictable result flowing from forming the non-woven gauze with an air-doffing apparatus card versus with the process using a lickerin roll set forth in *Matsumura*.

*Decision on Appeal*, Page 8, lines 20-23.

Appellants challenge this finding.

The claimed invention relates to a method of producing an absorbent material based on cellulose fibers and to the absorbent material based on cellulose fibers.

Appellants have recognized a common issue with known absorbent materials based on cellulose fibers, including those of *Matsumura*, is the difficulty in providing a soft, flexible (not stiff), strong, integrated absorbent material. Cellulose fibers are burdened by a lack of strength due to their short fiber-length and their weakness is pronounced when they become wet in use. See, e.g., *Matsumura*, column 1, lines 53-55. Thus, absorbent materials can be reinforced by suitable long fibers. See, e.g., *Matsumura*, column 1, lines 56-58.

The issue addressed in *Matsumura* is how to integrate these long fibers with the cellulose fibers to form an absorbent structure. This integration addresses a balancing of the properties of the resultant absorbent materials and the manufacturing realities of the production ability of such an absorbent material.

One skilled in the art reading *Matsumura* would focus on balancing the softness, flexibility (stiffness), strength, integration of the absorbent material. Softness is primarily dictated by the presence of the long fibers. Cellulose fibers are short and give a rough, uncomfortable feel to the skin. See, e.g., *Matsumura*, column 1, lines 59-61. Thus, the more long fibers in an absorbent material, typically the softer the absorbent material will be. Flexibility is primarily dictated by a lack of adhesives/binders. Adhesives used to bond the long and cellulose fibers result in a stiffness of the material as a whole. See, e.g., *Matsumura*, column 2, lines 10-12. Strength differences are primarily determined by the alignment of the long fibers and adhesives. *Matsumura* teaches that with rayon carding methods most of the fibers are aligned in the machine direction resulting in a very low strength in the cross

machine direction tensile strength. *Matsumura*, column 1, lines 18-26. *Matsumura* further teaches that a greater volume of binder is necessitated by the carding to overcome carding's strength deficiencies. See, e.g., *Matsumura*, column 1, lines 26-29. Integrity is primarily determined by the interaction of the long fibers and the cellulose fibers and adhesives used to gain such interaction. Most (if not all) prior art absorbent material, including those of *Matsumura*, delaminate easily (the long fibers delaminating from the cellulose fibers). In order to prevent delamination, the prior art absorbent materials, including those of *Matsumura*, were usually sent to an extra finishing step - such, as adhesive application or a mechanical finishing step.

Thus, it is quite clear that one skilled in the art faced a large number of properties to balance. Moreover, each change to would typically affect each property - often in counterbalancing ways - making a total improvement very difficult. And, very **unpredictable**.

One skilled in the art is left with the *Matsumura* disclosure as guidance. In disclosing and discussing their system, the *Matsumura* inventors **teach away** from the claimed invention.

*Matsumura* teaches that the primary prior art method was to separately form a long fiber mat and to separately form a cellulose mat. Then, these separately formed mats would be combined in a lamination process. In discussing the art, *Matsumura* specifically teaches away from using carded long fibers. *Matsumura* focuses on the lack of strength and their perceived need for adhesive, and the manufacturing problems of using a card. See *Matsumura* at column 1, lines 18-33, column 1, line 62 to column 2, line 12, and column 3, lines 21-30.

Then, after *Matsumura* discusses the laminated absorbent material, and the myriad disadvantages of carded long fibers, the *Matsumura* inventors disclose their (alleged) invention. *Matsumura* discloses the use of a lickerin followed by blowing (and the suction of) cellulose fibers. *Matsumura* recognizes that the fibers will have some integration. *Matsumura*, column 8, lines 60-64. But, the integration is weak. As evidence of this weak integration, *Matsumura* uses a finishing station which, for example, applies adhesive. *Matsumura*, column 9, lines 54 to column 10, line 6.

Accordingly, one skilled in the art is taught away from using card long fibers - either for a lamination process or with the process of *Matsumura*.

Yet, against this backdrop, appellants have discovered and designed a new method of producing an absorbent material based on cellulose fibers and the absorbent material based on cellulose fibers.

The claimed invention provides unpredictable results, e.g., results that are explained below. Providing a method/material based on carding that has an even reasonable mixture of results (when compared to the mixture of results of *Matsumura*) is unpredictable. There are many counter balancing factors to be optimized and the art teaches that carding is an undesirable option in any method of forming an absorbent material with cellulose fibers. Thus, if the claimed method/material provides an even reasonable mixture of results, then that should be patentable. However, the claimed invention provides an even greater than reasonable mixture of results, as explained below.

The claimed invention surprisingly allows an absorbent material to be made with a higher than normal percentage of long fibers. As discussed in *Matsumura*, a method using a lickerin unit is slow. *Matsumura*, column 2, lines 3-30. *Matsumura* typically adds 3 gm/M<sup>2</sup> of rayon with 1 lickerin unit. Example 1 (and Table 1) of the present application show that the appellants were able to add up to 5.3 % long rayon fibers compared to the 3.0 % of *Matsumura* with no adverse effects. The extra long fibers provide multiple advantages to a resultant absorbent material. One advantage of the claimed invention is that the absorbent material may be softer, due to the fact that the rayon fibers are softer than the sort, rough cellulose fibers. Another advantage of the claimed invention is that the absorbent material may be whiter due to the fact that the rayon fibers are typically whiter than the cellulose fibers.

Further, the claimed invention surprisingly allows much greater integration of the long fibers with the cellulose fibers. The claimed invention does not require adhesives or further mechanical processing. The "sufficient bonding" of the claimed invention enables production of a material that is able to avoid delamination. It is inherent from the claimed method steps that further mechanical processing is not required to obtain a sufficiently integrated product. In fact, the claimed invention allows for an absorbent material to be formed that is essentially homogenous. *Appellants' Specification*, page 7, lines 5-9. The integration enabled by the claimed

invention allows a more flexible product to be made because no adhesive is required.

In contrast, *Matsumura* teaches that carded fibers need an adhesive to maintain their strength due to an alleged weakness resulting from the alignment of the long fibers. *Matsumura*, column 1, line 62 to column 2, line 11. However, as shown in Example 1, and Table 1, of the present application the sample obtained according to the claimed invention have similar and even higher strength than those formed accord to the prior art. Without being bound to theory, appellants suggest that the greater integration between the long fibers and the cellulose fibers also increases the strength of the claimed invention. That is, even with the aligned long fibers, the highly integrated cellulose fibers provide enough support to produce a surprisingly strong absorbent material.

Accordingly, the claimed combination works together in an unpredicted manner. The fact that the claimed combination works together in an unexpected and fruitful manner strong evidence that the claimed invention was not obvious.

The Board is requested to consider the *KSR* decision. The *KSR* decision discusses and affirms the earlier Supreme Court decision of *United States v. Adams*:

In *United States v. Adams*, 383 U. S. 39, 40 (1966), a companion case to *Graham*, the Court considered the obviousness of a .wet battery. that varied from prior designs in two ways: It contained water, rather than the acids conventionally employed in storage batteries; and its electrodes were magnesium and cuprous chloride, rather than zinc and silver chloride. The Court recognized that when a patent claims a structure already known in the prior art that is altered by the mere substitution of one element for another known in the field, the combination must do more than yield a predictable result. 383 U. S., at 50.51. It nevertheless rejected the Government's claim that Adams's battery was obvious. The Court relied upon the corollary principle that when the prior art teaches away from combining certain known elements, discovery of a successful means of combining them is more likely to be nonobvious. *Id.*, at 51.52. When Adams designed his battery, the prior art warned that risks were involved in using the types of electrodes he employed. The fact that the elements worked together in an unexpected and fruitful manner supported the conclusion that Adams's design was not obvious to those skilled in the art.

*KSR* at page 12.

Appellants respectfully assert that the facts of *Adams* very closely mirror those of the present application. As in *Adams*, the prior art (*Matsumura*) teaches away from combining certain known elements. And, as in *Adams*, the fact that the elements work together in an unexpected and fruitful manner supports the conclusion that the claimed invention was not obvious to those skilled in the art.

Accordingly, the Board is respectfully requested to reconsider the question of whether the improvement (of the claimed invention) is more than the predictable use of prior art elements according to their established functions.

Appellants respectfully assert that the improvement of the claimed invention is more than the predictable use of prior art elements.

It is not believed that any fees are due with this filing. However, the Director is hereby authorized to charge any appropriate fees under 37 C.F.R. §§ 1.16, 1.17 and 1.20(d) and 1.21 that may be required by this paper, and to credit any overpayment, to Deposit Account No. 02-4800.

Respectfully submitted,

Buchanan Ingersoll & Rooney PC

Date 7 July 2008

By: \_\_\_\_\_

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